Pediatric HIV in Virginia, 1997

Pediatric HIV Overview. Both adult and pediatric HIV infections have been reportable in Virginia since July 1989. Patients who are diagnosed as HIV positive before 13 years of age are classified as pediatric HIV cases. Although the earliest pediatric case reported was in 1990, the earliest case diagnosed was in 1985. Two transmission risks

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Figure 1: Pediatric HIV by Transmission Risk

(hemophilia/transfusion and perinatal) account for most cases of diagnosed pediatric HIV in Virginia (see Figure 1). Infections due to HIV-contaminated blood or blood products were diagnosed each year between 1987 and 1993; the last case attributed to these causes was diagnosed in 1994. Perinatal transmission (from mother to infant) accounts for the largest number of cases diagnosed. The number of perinatal infections peaked at 19 in 1993. The number decreased to 17 in 1994, 8 in 1995, 11 in 1996 and 7 in 1997. [1]

The steep decline in diagnosed pediatric HIV in Virginia after 1993-94 coincides with scientific advances in combating the infection, innovative treatment recommendations and practices, and changes in Virginia's laws about HIV counseling and testing for women who seek prenatal care.

The ACTG-076 Trial. The AIDS Clinical Trials Group (ACTG) 076 showed for the first time that administering AZT (zidovudine) to pregnant, HIV-infected women could reduce transmission of the virus to the infant by as much as 68%. The evidence showed that AZT administered according to the clinical protocols reduced transmission from approximately 25.5% to 8.3%.[2]

US Public Health Service Recommendations. The United States Public Health Service (PHS) evaluated the ACTG 076 results in 1994 and published specific recommendations to protect womens' and infants' health. [3] The PHS recommendations encourage providers to "...ensure that all pregnant women are counseled and encouraged to be tested for HIV infection..." (p. 8) after obtaining consent and that counseling and testing be done as early in pregnancy as possible. PHS also recommends that infants whose mothers' HIV status is unknown be tested and that information about AZT treatment be provided to HIV-infected women. An important recommendation concerns prophylactic treatment of infants whose mothers have received no AZT therapy:

> Data from animal prophylaxis studies indicate that, if ZDV {zidovudine, AZT} is administered, therapy should be initiated as soon as possible (within hours) after delivery. If therapy cannot begin until the infant is > 24 hours of age and the mother did not receive therapy during labor, no

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Figure 2: HIV Test History

data support offering therapy to the infant. (*ibid.* p. 13)

If the mother's HIV status is known before the infant's birth and she receives appropriate AZT therapy, the best medical outcome for the infant is obtained.

The 1995 Virginia Counseling and Testing Law. The 1995 Virginia legislature passed a law effective in July of 1995 that requires health care providers to counsel women seeking prenatal care about HIV and to offer voluntary testing to them. This law was a response to increased concern about HIV among women and children. The law requires physicians to counsel pregnant women about the value of HIV testing "As a routine component of prenatal care..." and to "...request of each such pregnant woman consent to such testing." If a woman is HIV-infected, the law directs physicians to perform posttest counseling to inform her "...about the dangers to the fetus and the advisability of receiving treatment in accordance with the then current Centers for Disease Control recommendations for HIV-positive pregnant women." The effect of this law has been to encourage HIV counseling and voluntary testing among pregnant women.

1997 Survey of Physicians. Evidence from a 1997 statewide survey provides a look at counseling and testing practices in physicians' offices. In this survey, physicians were asked what proportion of patients who present for pregnancy tests or prenatal care were offered HIV tests. Almost all (99%) obstetricians and gynecologists reported that they offered counseling and testing to between 76-100% of their pregnant patients. Other physicians reported a much lower percentage (26%). Ob/Gyns report that over 80% of pregnant women accept counseling and testing. For those who refuse testing, the primary reasons are because they have already been tested (37%) or think that they are not at risk for infection (40%). Relatively few women (5.7%) did not want to know their HIV status.

Mother's HIV Test History. The Division of STD/AIDS collects information on the history of HIV testing for infants born to HIV-infected women; a total of 528 births to HIV-infected women have been reported to the Division through December 31, 1997. Not all these infants are actually infected; this number includes all reported births to infected mothers.[4] For these births, 76% of the mothers knew their HIV status either before or during pregnancy. Thus, the majority of women knew their HIV status before giving birth.

Changes in administering HIV tests are apparent when pre-1995 births are compared with births in 1995 and later. The percentage of pregnant women who had an HIV test before pregnancy jumped from 33% among pre-1995 births to 51% during 1995 and later. Tests during pregnancy increased from 36% pre-1995 to 41% in the latter period. Overall, the percentage of births to HIV-infected mothers in which the mother's HIV status was known before birth rose from less than 70% before 1995 to more than 90% during and after 1995.

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Figure 3: Mothers Receiving AZT

AZT Treatment. The Virginia data show a dramatic rise in the use of AZT to treat pregnant women (see Figure 3; treatment includes before pregnancy, during pregnancy or during labor and delivery). Before 1994, less than 10 percent of mothers received this treatment each year. Usage jumped to 45% in 1994 and has increased further each succeeding year. The level reached 81% in 1997, and this figure may rise as case updates are made. These data indicate that women are increasingly likely to receive AZT and that the rate of vertical transmission may decrease.

Comments. Reporting HIV infections in Virginia has meant that cases can be tracked over time. Health care decisions that have an effect on the course of the disease and transmission of the virus from mother to child, in instances of pediatric HIV, can be studied.

Important events in 1994 and 1995 influenced counseling, testing and treating pregnant women. The efficacy of AZT treatment in decreasing perinatal transmission was demonstrated in clinical settings. PHS recommendations translated the scientific knowledge into useful treatment strategies health care providers put into practice. Virginia's legal environment changed so that HIV counseling and voluntary testing for pregnant women became emphasized.

Various measures of response to HIV infection among pregnant women agree. Physicians who primarily care for pregnant women reported in 1997 that they offer counseling and testing to almost 100% of their patients who seek prenatal care. The proportion of women whose HIV status is known before giving birth has climbed to more than 90%. Over 80% of known positive women who delivered in 1997 received AZT therapy before giving birth. Combined, these measures should result in fewer cases of perinatal HIV infection. Continuing surveillance and case reporting will document changes in perinatal HIV and provide information for responding to changes.[5]

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[1] Because babies born to HIV+ mothers carry maternal antibodies to the virus, the HIV status of the child may not be determined until 15-18 months after birth. The number of 1996 and 1997 cases may rise as pending cases become confirmed cases.

[2] Conner, EM, RS Sperling, et.al. Reduction of Maternal—Infant Transmission of Human Immunodeficiency Virus Type 1 With Zidovudine Treatment. *New England Journal of Medicine* 331(18):1173-1180; November 3, 1994.

[3] Recommendations of the U. S. Public Health Service Task Force on the Use of Zidovudine to Reduce Perinatal Transmission of Human Immunodeficiency Virus, *Morbidity and Mortality Weekly Report*, 08/05/94, vol. 44, No. RR-11.

[4] This percentage *does not match* the number published in the *Quarterly Surveillance Report* because not all infants born to HIV-infected mothers are infected. Infants are reported as being potentially infected because their mothers are known to be infected and newborns carry maternal antibodies to the virus. Children who meet certain medical criteria and who test antibody negative a certain number of months after birth are classified as HIV negative.

[5] Compiled and written by J. Martin. In: *Division of STD/AIDS Quarterly Surveillance Report*, 6(1):39-41; Richmond: Virginia Department of Health; December 31, 1997.